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EXAMINER	
TIMBLIN, ROBERT M	

ART UNIT	PAPER NUMBER
2167	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/674,974	CHEN ET AL.	
	Examiner	Art Unit	
	Robert M. Timblin	2167	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 July 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1, 3-11, 13-20, 22-29, and 32-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-11,13-20,22-29 and 32-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Andany, José et al. "Management of Schema Evolution In Databases." 17th international conference on Very Large Data Bases. Barcelona, September, 1991. Pages 161-

DETAILED ACTION

This Office Action is responsive to application 10/67,4974 filed 6/30/2006.

Response to Amendment

Applicant's amendments filed 7/6/2007 have been entered. In the amendments, claims 1, 3, 10, 20, 22, 29 and 32 were amended. Accordingly, claims 1, 3-11, 13-20, 22-29 and 32-38 are pending.

Claim Objections

The previous claim objections have been withdrawn with respect to the present amendments.

Claim Rejections - 35 USC § 112

The previous rejections under 35 USC 112 have been withdrawn in light of the amendments.

However, claim 1 is now rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, the amended "the additional step" is unclear as to where a first step is present in the claim. In other words, "the additional step" raises questions as to what the step in the claim "the additional step" builds upon.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 3-11, 13-20, 22-29, and 32-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ng et al. (Ng hereinafter) (US 6,609,133 B2) in view of Srivastava et al. (Srivastava hereinafter) (US 2002/0120685 A1).

With respect to claim 1, Ng teaches a method for validating data in a backend driven environment, the method comprising:

creating an XML Schema for a database (col. 4 line 1-7 and line 35-42, col. 5 line 45-50, and figure 3), wherein the XML Schema contains a plurality of rules for validating (col. 5 line 20-33) a plurality of data in the database (col. 9 line 8-28, figure 12, col. 4 line 36-42, and col. 5 line 45-50);

copying the database to a hash table (col. 5 line 60-67, col. 6 line 19-27, and col. 11 line 10-58);

determining if the database and the hashtable are not identical (col. 7 line 28-41, col. 8 line 10-27, and figure 10); and

responsive to a determination that that database and the hashtable are identical, creating a new XML Schema (col. 8 line 29-50);

wherein the step of creating a new XML Schema includes automatically updating the plurality of rules (col. 4 line 29-51); and

Ng fails to expressly teach wherein a new XML schema is created only when a determination is made that the database and the hashtable are not identical.

Janzig, however, teaches a new XML schema is created only when a determination is made that the database and the hashtable are not identical (col. 4 line 42-54, col. 9 lines 14 and 30-35, and figure 19) to determine that the structure of the database has changed and thereby creating a new schema. Furthermore, Janzig would have given Ng explicit validation rules (i.e. Janzig at col. 10, describes two tables with valid data types accepted in a database) for validating data and updating those rules when the new schema is created.

In the same field of endeavor, (i.e. creating database schemas and preserving changes thereto), it would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because the teachings of Janzig would have given Ng a new schema when the database is changed (as taught by Janzig at col. 2 line 30-30). Ng is concerned with creating new schemas as databases evolve (i.e. Ng at col. 2 lines 38-43) and comparing a database to a hashtable (i.e. col. 7 line 28-41) to determine if they are

identical (in other words to determine change in a database). Therefore it would have been obvious to combine Janzig's teachings of creating a new schema when Ng determines database changes to keep the database and schema consistent.

Ng also fails to expressly teach designating a query interval and upon the occurrence of a query interval, comparing the database to the hash table, and the use of an XML Schema for validating data.

Srivastava however, teaches designating a query interval and upon the occurrence of a query interval, comparing the database to the hash table (0068-0069) for specifying when to perform an update check. Furthermore, Srivastava teaches the use of an XML schema (paragraph 0010) for validating data.

In the same field of endeavor, (i.e. data processing), it would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because Srivastava would have provided Ng's system with ensuring system integrity with use of an XML schema. Further, Srivastava's teaching would have Given Ng a query interval for checking updates for the benefit of efficiently determining when a data source has been modified (as needed in Ng at col. 3 line 35-39 and 53-56).

Claim 2. (Cancelled).

With respect to claim 3, Ng fails to teach resetting the query interval.

Srivastava, however teaches resetting the query interval (0068). The motivation for combination can be equally applied from claim 1. The rejection of claim 3 equally applies well to claim 22 and 32.

With respect to claim 4, Ng teaches the method of claim 1 wherein the additional steps further comprise: deleting the hashtable and saving the database as a new hashtable (col. 8 line 42-58).

With respect to claim 5, Ng teaches the method of claim 1 wherein the additional steps further comprise: storing the new XML Schema in a web server's virtual root (col. 4 line 53-col. 5 line 5 and figure 1).

With respect to claim 6, Ng teaches 6. The method of claim 1 wherein a limited number of tables from the database are copied to the hashtable (col. 6 line 1-28); and

wherein upon the occurrence of a query interval, the database tables are compared to the tables in the hashtable (col. 8 line 10-28).

With respect to claim 7, Ng teaches the method of claim 1 wherein a database metadata is copied to the hashtable (col. 5 line 60-67); and

wherein upon the occurrence of a query interval, the database metadata is compared to the metadata in the hashtable (col. 8 line 10-28).

With respect to claim 8, Ng fails to teach notifying a registered party of an update to the XML schema.

Srivastava, however, teaches notifying a registered party of an update to the XML Schema (0068 and 0447).

In the same field of endeavor, (i.e. data processing), it would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because the notification method of Srivastava would have given Ng a way to notifying users of change for further providing an indication of modification which is needed by Ng in col. 3 line 53-55. This rejection equally applies well to claim 18, 27, and 37.

With respect to claim 9, Ng fails to teach using a database trigger to indicate a change in the database.

Srivastava, however, teaches using a database trigger to indicate a change in the database (0448) for executing services upon the occurrence of events.

In the same field of endeavor, (i.e. data processing), it would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because the teaching of Srivastava would have given Ng a further efficient way to detect modifications. This rejection equally applies well to claim 19, 28, and 38).

With respect to claim 10, Ng teaches a first method for validating proposed additions to a database comprising:

accessing an XML Schema stored in a web server's virtual root (col. 4 line 53-col. 5 line 5 and figure 1);

submitting the data to a database (col. 5 line 28-31); validating the data (col. 5 line 28-31), and adding the validated data to the database (e.g. in col. 5, line 28-31 Ng teaches determining if a field can accept a null value, thereby suggesting validation of incoming data and upon acceptance, adding it to the database),

wherein the XML Schema is created by a second method comprising:

creating an XML schema for a database (col. 4 line 1-7 and line 35-42, col. 5 line 45-50, and figure 3);

copying the database to a hash table (col. 5 line 60-67, col. 6 line 19-27, and col. 11 line 10-58).

Ng fails to expressly teach when the database and the hashtable are not identical, creating a new XML Schema.

Janzig, however, teaches when the database and the hashtable are not identical, creating a new XML Schema (col. 4 line 42-54, col. 9 lines 14 and 30-35, and figure 19) to determine that the structure of the database has changed and thereby creating a new schema. Furthermore, Janzig would have given Ng explicit validation rules (i.e. Janzig at col. 10, describes two tables with valid data types accepted in a database) for validating data and updating those rules when the new schema is created.

In the same field of endeavor, (i.e. creating database schemas and preserving changes thereto), it would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because the teachings of Janzig would have given Ng a new schema when the database is changed (as taught by Janzig at col. 2 line 30-30). Ng is concerned with creating new schemas as databases evolve (i.e. Ng at col. 2 lines 38-43) and comparing a database to a hashtable (i.e. col. 7 line 28-41) to determine if they are identical (in other words to determine change in a database). Therefore it would have been obvious to combine Janzig's teachings of creating a new schema when Ng determines database changes to keep the database and schema consistent.

Ng also fails to expressly teach designating a query interval and upon the occurrence of a query interval, comparing the database to the hash table, and the use of an XML Schema for validating data.

Srivastava however, teaches designating a query interval and upon the occurrence of a query interval, comparing the database to the hash table (0068-0069) for specifying when to perform an update check. Furthermore, Srivastava teaches the use of an XML schema (paragraph 0010) for validating data.

In the same field of endeavor, (i.e. data processing), it would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because Srivastava would have provided Ng's system with ensuring system integrity with use of an XML schema. Further, Srivastava's teaching would have Given Ng a query interval for checking updates for the

benefit of efficiently determining when a data source has been modified (as needed in Ng at col. 3 line 35-39 and 53-56).

With respect to claim 11 Ng teaches the first method of claim 10 further comprising: creating an XML Schema for a database (col. 4 line 1-7 and line 35-42, col. 5 line 45-50, and figure 3).

Claim 12. (Cancelled).

With respect to claim 13, Srivastava teaches the first method of claim 10 wherein the second method further comprises: when the database and the hashtable are identical, resetting the query interval [0068] and repeating the steps in claim 10. The motivation for combination can equally apply from the rejection of claim 10.

With respect to claim 14, Ng teaches the method of claim 10 wherein the second method further comprises: deleting the hashtable and saving the database as a new hashtable (col. 8 line 42-58).

With respect to claim 15, Ng teaches the method of claim 10 wherein the second method further comprises: storing the new XML Schema in a web server's virtual root (col. 4 line 53-col. 5 line 5 and figure 1).

With respect to claim 16, Ng teaches the first method of claim 10 wherein the second method further comprises: wherein a limited number of tables from the database

are copied to the hashtable; and wherein upon the occurrence of a query interval, the database tables are compared to the tables in the hashtable (col. 6 line 1-28).

With respect to claim 17, Ng teaches the first method of claim 10 wherein the second method further comprises: wherein a database metadata is copied to the hashtable (col. 5 line 60-67); and

wherein upon the occurrence of a query interval, the database metadata is compared to the metadata in the hashtable (col. 8 line 10-28).

With respect to claim 20, Ng teaches a program product operable on a computer, the program product comprising:

a computer-usable medium (figure 1);

wherein the computer usable medium comprises instructions contained in the program product comprising:

instructions for creating an XML Schema for a database (col. 4 line 1-7 and line 35-42, col. 5 line 45-50, and figure 3);

wherein the XML Schema contains a plurality of rules for validating (col. 5 line 20-33) a plurality of data in the database (col. 9 line 8-28, figure 12, col. 4 line 36-42, and col. 5 line 45-50);

instructions for copying the database to a hashtable (col. 5 line 60-67, col. 6 line 19-27, and col. 11 line 10-58);

instructions for determining if the database and the hashtable are identical (col. 7 line 28-41, col. 8 line 10-27, and figure 10); and

responsive to a determination that that database and the hashtable are identical (col. 7 line 28-41, col. 8 line 10-27, and figure 10), instructions for performing additional steps comprising: instructions for creating a new XML Schema (col. 8 line 29-50);

wherein the instructions for creating a new XML Schema cause the computer to automatically update the plurality of rules (col. 4 line 29-51).

Ng fails to expressly teach wherein a new XML schema is created only when a determination is made that the database and the hashtable are not identical.

Janzig, however, teaches a new XML schema is created only when a determination is made that the database and the hashtable are not identical (col. 4 line 42-54, col. 9 lines 14 and 30-35, and figure 19) to determine that the structure of the database has changed and thereby creating a new schema. Furthermore, Janzig would have given Ng explicit validation rules (i.e. Janzig at col. 10, describes two tables with valid data types accepted in a database) for validating data and updating those rules when the new schema is created.

In the same field of endeavor, (i.e. creating database schemas and preserving changes thereto), it would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because the teachings of Janzig would have given Ng a new schema when the database is changed (as taught by Janzig at col. 2 line 30-30). Ng is concerned with creating new schemas as databases evolve (i.e. Ng at col. 2 lines 38-43) and

comparing a database to a hashtable (i.e. col. 7 line 28-41) to determine if they are identical (in other words to determine change in a database). Therefore it would have been obvious to combine Janzig's teachings of creating a new schema when Ng determines database changes to keep the database and schema consistent.

Ng also fails to expressly teach designating a query interval and upon the occurrence of a query interval, comparing the database to the hash table, and the use of an XML Schema for validating data.

Srivastava however, teaches designating a query interval and upon the occurrence of a query interval, comparing the database to the hash table (0068-0069) for specifying when to perform an update check. Furthermore, Srivastava teaches the use of an XML schema (paragraph 0010) for validating data.

In the same field of endeavor, (i.e. data processing), it would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because Srivastava would have provided Ng's system with ensuring system integrity with use of an XML schema. Further, Srivastava's teaching would have Given Ng a query interval for checking updates for the benefit of efficiently determining when a data source has been modified (as needed in Ng at col. 3 line 35-39 and 53-56).

Claim 21. (Cancelled).

With respect to claim 23, Ng teaches the program product of claim 20 wherein the additional steps further comprise: instructions for deleting the hashtable and saving the database as a new hashtable (col. 8 line 42-58).

With respect to claim 24, Ng teaches the program product of claim 20 wherein the additional steps further comprise: instructions for storing the new XML Schema in a web server's virtual root (col. 4 line 53-col. 5 line 5 and figure 1).

With respect to claim 25, Ng teaches the program product of claim 20 wherein a limited number of tables from the database are copied to the hashtable (col. 6 line 1-28); and

wherein upon the occurrence of a query interval, the database tables are compared to the tables in the hashtable (col. 8 line 10-28).

With respect to claim 26, Ng teaches the program product of claim 20 wherein a database metadata is copied to the hashtable (col. 5 line 60-67); and

wherein upon the occurrence of a query interval, the database metadata is compared to the metadata in the hashtable (col. 8 line 10-28).

With respect to claim 29, Ng teaches a first program product operable on a computer, the program product comprising:

a computer-usable medium (figure 1);

wherein the computer usable medium comprises instructions contained in the program product comprising:

instructions for accessing an XML Schema stored in a web server's virtual root (col. 4 line 53-col. 5 line 5 and figure 1);

wherein the XML Schema contains a plurality of rules for validating (col. 5 line 20-33) a plurality of data in the database (col. 9 line 8-28, figure 12, col. 4 line 36-42, and col. 5 line 45-50);

instructions for checking the validity of data using the XML Schema (col. 5 line 28-31), submitting the data to a database (col. 5 line 28-31); validating the data (col. 5 line 28-31), and adding the validated data to the database (e.g. in col. 5, line 28-31 Ng teaches determining if a field can accept a null value, thereby suggesting validation of incoming data and upon acceptance, adding it to the database)

wherein the XML Schema is created by a second program product comprising:

instructions for determining if the database and the hashtable are identical (col. 7 line 28-41, col. 8 line 10-27, and figure 10);

when the database and the hashtable are not identical (col. 8 line 29-50), instructions for creating a new XML Schema (col. 8 line 29-50):

wherein the step of creating a new XML Schema includes automatically updating the plurality of rules (col. 4 line 29-51); and

Ng fails to expressly teach when the database and the hashtable are not identical, creating a new XML Schema.

Janzig, however, teaches when the database and the hashtable are not identical, creating a new XML Schema (col. 4 line 42-54, col. 9 lines 14 and 30-35, and figure 19) to determine that the structure of the database has changed and thereby creating a new schema. Furthermore, Janzig would have given Ng explicit validation rules (i.e. Janzig at col. 10, describes two tables with valid data types accepted in a database) for validating data and updating those rules when the new schema is created.

In the same field of endeavor, (i.e. creating database schemas and preserving changes thereto), it would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because the teachings of Janzig would have given Ng a new schema when the database is changed (as taught by Janzig at col. 2 line 30-30). Ng is concerned with creating new schemas as databases evolve (i.e. Ng at col. 2 lines 38-43) and comparing a database to a hashtable (i.e. col. 7 line 28-41) to determine if they are identical (in other words to determine change in a database). Therefore it would have been obvious to combine Janzig's teachings of creating a new schema when Ng determines database changes to keep the database and schema consistent.

Ng also fails to expressly teach designating a query interval and upon the occurrence of a query interval, comparing the database to the hash table, and the use of an XML Schema for validating data.

Srivastava however, teaches designating a query interval and upon the occurrence of a query interval, comparing the database to the hash table (0068-0069)

for specifying when to perform an update check. Furthermore, Srivastava teaches the use of an XML schema (paragraph 0010) for validating data.

In the same field of endeavor, (i.e. data processing), it would have been obvious to one of ordinary skill in the data processing art at the time of the present invention to combine the teachings of the cited references because Srivastava would have provided Ng's system with ensuring system integrity with use of an XML schema. Further, Srivastava's teaching would have Given Ng a query interval for checking updates for the benefit of efficiently determining when a data source has been modified (as needed in Ng at col. 3 line 35-39 and 53-56).

Claims 30-31. (Cancelled).

With respect to claim 33, Ng teaches the first program product of claim 29 wherein the second program product further comprises: instructions for deleting the hashtable and saving the database as a new hashtable (col. 8 line 42-58).

With respect to claim 34, Ng teaches the first program product of claim 29 wherein the second program product further comprises: instructions for storing the new XML Schema in a web server's virtual root (col. 4 line 53-col. 5 line 5 and figure 1).

With respect to claim 35, Ng teaches the first program product of claim 30 wherein a limited number of tables from the database are copied to the hashtable (col. 6 line 1-28); and

wherein upon the occurrence of a query interval, the database tables are compared to the tables in the hashtable (col. 8 line 10-28).

With respect to claim 36, Ng teaches the first program product of claim 30 wherein a database metadata is copied to the hashtable (col. 5 line 60-67); and

wherein upon the occurrence of a query interval, the database metadata is compared to the metadata in the hashtable (col. 8 line 10-28).

Response to Arguments

Applicant's arguments, see response, pages 10-14, filed 7/6/2007, with respect to the rejection(s) of the present claims under 35 U.S.C. 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the newly found prior art, Janzig.

Applicant argues on page 11 of the response that neither Ng nor Srivastava teach updating the XML Schema and its validation rules only when the database and a hashtable are not identical upon the occurrence of a query interval. In light of the above rejection, the Examiner respectfully submits that the combination of Ng, Janzig, and

Srivastava render the claims including the limitation of updating the XML Schema and its validation rules only when the database and a hashtable are not identical upon the occurrence of a query interval obvious.

Specifically, Janzig teaches creating a new schema when a database is altered or modified (i.e. the structure is changed) and further validation rules for validating data. Ng teaches comparing a database to a hashtable to determine structure changes in the database. Srivastava teaches the frequency with which the update check is to be performed (i.e. query interval). The Examiner respectfully submits in the combination of the prior art, the invention as claimed is rendered obvious.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Andany, José et al. "Management of Schema Evolution In Databases." 17th international conference on Very Large Data Bases. Barcelona, September, 1991. Pages 161-170.

U.S. Patent 7,051,041 to Miller et al. The subject matter disclosed therein pertains to the pending claims (i.e. creating a new schema upon a structural change in a database).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert M. Timblin whose telephone number is 571-272-5627. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Cottingham can be reached on 571-272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Robert M. Timblin

Patent Examiner AU 2167
9/14/2007

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